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Springfield, IL 62781-0001

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14. ABSTRACT  The purpose of this research is to develop a program of systematic, brief training in role appropriate team behaviors covering key communication, leadership, and team member behaviors for ad hoc emergency medical care teams and to determine whether training in these behaviors results in improved individual and team communication, leadership and team member performance in simulated emergency care situations regularly faced by trauma and emergency department medical care teams. In project year two we have modified our completion schedule and milestone completion dates, submitted an application for a no-cost extension with a revised project completion date of December 2012, received approval of the no-cost extension, received approval of our research protocol by our local IRB and by USAMRMC ORP HRPO, completed the training module and the demonstration videos used in the training module, refined and pilot tested the three simulation scenarios that will be used for team practice and to document changes in individual and team performance.				
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## Introduction

Medical care is increasingly the responsibility of teams rather than individuals. This realization has led to increased team training of medical professionals with a focus on establishing role appropriate team behaviors emphasizing team communication, leadership and team member skills. Emergency departments and trauma centers are unusual care settings in that circumstances provide little time for deliberation and planning at the time of patient care due to the emergency nature of the cases. Furthermore, care is provided by ad hoc teams where the composition of the group responsible for delivery of care is not constant but the roles and responsibilities needed are invariant. Finally, members of the team may enter at various points as the case unfolds. These conditions require special team leadership, communication and team member skills. The purpose of this research is to develop a program of systematic, brief training in role appropriate team behaviors covering key communication, leadership, and team member behaviors for emergency medical care teams and to determine whether training in these behaviors will result in improved targeted individual and ad hoc team communication, leadership and team member behaviors in simulated emergency care situations such as those regularly faced by trauma and emergency department medical care teams.

In last year's annual report we reported on completion of task 1, "Determine the objectives and content for the training interventions". We also reported some progress toward completion of task 2, "Plan the objectives, content and instructional strategies for the training interventions and develop the training modules", and addressed the issues that led to us being behind the original schedule. During the second year we requested a no-cost extension of the project to allow us time to meet all of the original objectives of the project. This request for an extension was granted on 21-Jul-2011. As a result, the project is now scheduled to be completed 30 Dec 2012. The remainder of this annual report will address the progress we have made toward meeting the revised milestones as set down in the request for a no-cost extension and accomplishing the original objectives of the project. I am happy to report that the activities and accomplishments by project staff reflect that the project is now on schedule to meet the milestones and complete the project on schedule.

## Body

The following provides a description of project accomplishments during project year 2 broken down by the tasks and subtasks spelled out in the approved revised statement of work.

### Task 1. Develop the training module (Milestone Completion Date: 31 August 2011)

The training module has been completed and pilot tested. The training module includes all target behaviors including 1) the SMARTT Communication portion (**situation; management; activity** –What needs to happen next; **rapidity** – what needs to be done first and how quickly; **troubleshoot** – what may go wrong and steps to correct; **talk to me** – what are your concerns, what has leader missed, what other pertinent information needs to be shared; 2) the leadership elements for trauma team leaders (explicit assignment of tasks to team members by name and/or function, explicit transitions of leadership when leadership is handed over to others, managing noise in the room, managing workload of team members, encouraging team members to volunteer key information) and 3) the role appropriate team behaviors for other team members (e.g. announce yourself by name and role when

entering the trauma bay, volunteer important information, speak only when necessary for patient care, verbally confirm orders and report completion of tasks).

Videos have also been completed to demonstrate the SMARTT communication, leadership and other appropriate team behaviors and these videos have been incorporated into the training module.

**Task 2. Development of Simulation Scenarios (Milestone Completion Date: 31 August 2011)**

We have developed four simulated trauma resuscitation scenarios for use in the training. One is a demonstration scenario for demonstrating the target behaviors. The other three will alternate as practice scenarios which will provide the participants with practice using the target behaviors at the end of the training session, and pre-intervention and retention simulation exercises that, along with the practice exercises, will be used to document the impact of training. The practice simulation exercise and the post intervention retention exercise will be followed by team debriefing sessions designed to cement the desired target behaviors and to correct target behaviors performed incorrectly. We have developed the debriefing protocol and trained those who will do the debriefing. The debriefing will be done by two trauma surgeons and two emergency department physicians.

**Task 3. Data collection and interpretation plan for analyzing individual and team performance data during simulation scenarios**

The plan for data collection and interpretation was completed in the 1 March 2011 to 31 May 2011 Quarter. It will be refined in the process of analyzing and interpreting the data.

**Task 4. Training interventions and the associated simulation scenarios pilot tested. (Milestone Completion Date: 31 August 2011)**

As mentioned previously the SMARTT Stepback, leadership and team member training intervention has been designed and the Powerpoint presentation has been developed. John Sutyak, MD, Director of the Trauma Center has taken the lead on developing and refining this presentation. He will also be the person making the presentation for all participants in this study. The videos demonstrating the target behaviors have all been developed now with the leadership and team member behavior demonstration videos filmed on 9 June 2011. The demonstration videos have been edited and incorporated into the Powerpoint presentation.

The training intervention was pilot tested on 9 September, 2011 with a nurse (Cathy Schwind, RN, a general surgery resident with advanced training as a surgical education fellow (Michael Kim, MD) and a learning psychologist (Reed Williams, Ph.D.) present. Suggestions were made and changes were made in the presentation as needed.

The three simulation scenarios were pilot tested on 22-23 June 2011. The pilot testing was conducted by two nurse educators (Cathy Schwind, RN, Margaret

Boehler, RN) two trauma nurses (Linda Riesman, RN, Becky O'Sullivan, RN) a trauma surgeon (Christopher Wohltman, MD) and a technician from the simulation center (Chris Reavis). The focus of the pilot test was to assure that the simulator functioned effectively, and to assure that the simulation was a realistic representation of an actual trauma case.

#### **Task 5. Approval of the project by the local IRB and by the USAMRMC ORP HRPO**

Our IRB protocol was amended based on recommendations from Patricia A. Shank, RN, BSN, CCRP, PMP, our Human Subjects Protection Scientist representative at USAMRMC ORP HRPO. This revised protocol (Version 3, dated 1 June 2011) was submitted to the Springfield Committee on Research Involving Human subjects (SCRIHS), the local IRB, on 02 June 2011. The amended IRB protocol was approved by SCRIHS on 06 July 2011. This protocol was reviewed by the U.S. Army Medical Research and Materiel Command (USAMRMC), Office of Research Protections (ORP), Human Research Protection Office (HRPO) and found to comply with applicable DOD, U.S. Army, and USAMRMC human subjects protection requirements as reported in an Approval Memorandum dated 15 July 2011 5:41 pm.

#### **Key Research Accomplishments**

We have no key publishable research accomplishments to report as we have not collected data yet. Data will be collected starting this week (28-30 September 2011).

#### **Reportable Outcomes**

There are no reportable outcomes yet.

#### **Conclusion**

I am happy to report that this project is progressing according to the approved schedule in the no-cost extension. All revised milestones have been achieved. Training and data collection will begin this week (28-30 September 2011). All key players from the emergency department and the trauma center have played active roles in the final design and development of the training and training materials. They will also play key and visible roles in delivering the training and debriefing the teams after simulated trauma resuscitations designed to provide practice using the communication, leadership and other team behaviors that are the focus of training. These training characteristics are critical in efforts to change practice culture through training.